



## **POLICY ISSUE**

(Information)

September 28, 2004

FOR: The Commissioners

FROM: Luis A. Reyes  
Executive Director for Operations

SUBJECT: FINAL REPORT ON THE TRANSITIONAL FORCE-ON-FORCE EXERCISE PROGRAM

PURPOSE:

To inform the Commission on the results of the transitional force-on-force (TFOF) exercise program at commercial nuclear power plants and the staff's plans for implementing a force-on-force (FOF) evaluation program that is integrated with the baseline physical protection inspection program.

SUMMARY:

Consistent with the Chairman's Priority Action List, this paper documents the lessons learned from the TFOF exercises conducted at 13 of 16 scheduled commercial nuclear power plant sites. It also describes the staff's plans for completing program developmental activities and implementing an FOF evaluation program that is integrated with the baseline physical protection inspection program. The TFOF program will be completed on October 22, 2004. The staff is now preparing to implement the FOF evaluation program in November 2004.

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Exemption number: 2 & 5

Nuclear Regulatory Commission review required before public release.

Ronald Albert, Acting Section Chief, NSIR/DNS/SPES  
Name and organization of person making determination:

Date of Determination:

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AKG MLO42610183  
Paper MLO42370086  
Box 1 MLO42610188

SECY-04-0174

Box 2 MLO42610195

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### BACKGROUND:

In response to the September 11, 2001, attacks in New York and Washington, the Commission temporarily suspended FOF evaluations at nuclear power plants. Subsequently, the Commission approved staff plans to resume FOF exercises in an orderly phased approach. Phase 1, via expanded tabletop drills, analyzed the potential impact of certain specific adversary characteristics reflecting the heightened threat level and the compensatory measures (CMs) required by the February 25, 2002, Order at power reactor licensees. The results of these tabletop drills were reported to the Commission in SECY-02-0223, "Expanded Table-Top Drill Lessons Learned and Proposed Force-On-Force Testing Pilot Program," dated December 23, 2002.

In Staff Requirements Memorandum (SRM)-SECY-02-0223, dated January 23, 2003, the Commission approved Phase 2, involving the conduct of pilot FOF exercises at commercial nuclear power reactor sites using expanded adversary characteristics. The staff documented interim lessons learned from the first five pilot expanded FOF exercises to the Commission in SECY-03-0147, "Interim Lessons Learned From the Pilot Expanded Force-on-Force Exercise Program," dated August 25, 2003. The staff also briefed the Commission on these lessons and the actions taken on September 11, 2003. The final Phase 2 exercise was completed in December 2003.

In SECY-03-0187, "Staff Plans to Conduct a Transitional Force-on-Force Exercise Program at Commercial Nuclear Power Plants," dated October 30, 2003, the staff informed the Commission of plans to conduct a transitional FOF program (Phase 3) while facility licensees adapted their security programs to the supplemented requirements to implement the Design Basis Threat (DBT).

In SECY-03-0208, "Adversary for Force-on-Force Exercises at NRC-Licensed Facilities," dated December 3, 2003, the staff recommended the development and implementation of a process to ensure that a credible, well trained, and consistent adversary is used in FOF exercises at NRC-licensed facilities. The staff presented options which included either an industry-maintained or an NRC-maintained Composite Adversary Force (CAF). The Commission

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In SECY-04-0091, "Provisional Physical Protection Significance Determination Process to Evaluate Findings from the Security Baseline Inspection and Force-on-Force Exercise Programs," dated June 3, 2004, the staff provided the Commission information regarding the provisional Physical Protection Significance Determination Process (PPSDP).

In SRM-SECY-04-0083, dated August 13, 2004, the Commission approved all of the staff's recommendations, subject to specific guidance. Consistent with Commission guidance, the TFOF program is ongoing and will be completed in October 2004, as discussed below.

### DISCUSSION:

#### Program Guidance

The staff revised Temporary Instruction (TI) 2515/151, "Expanded Pilot Force-on-Force Exercise Evaluation Program," prior to the start of TFOF exercises to incorporate appropriate lessons learned from the earlier EFOF exercises and to reflect the supplemented requirements to implement the DBT. The revised TI also redefined the program objectives, shifting away from evaluation of the impact of expanded adversary characteristics and interim CMs with a tertiary objective of evaluating process issues. The primary objectives of the revised TI focus on the evaluation of the process and the scope of FOF exercises with an emphasis on gaining insights into licensees' enhanced physical security programs before beginning the FOF evaluation program. Secondary objectives of the revised TI focus on an evaluation of licensees' abilities to protect against the supplemented requirements to implement the DBT, and the identification of potential power reactor licensee vulnerabilities.

The revised TI-2515/XXXX, "Transition Force-on-Force Exercise Evaluation Program," is provided as Attachment 1. The TFOF TI has remained a draft, since it has been revised to capture lessons learned throughout the pilot program. A final FOF evaluation procedure incorporating lessons learned from the EFOF and TFOF will be issued to implement the new program by November 2004.

The staff gained insights into licensees' enhanced physical security programs since September 11, 2001, through: (a) evaluation of potential adjustments to the CMs; (b) evaluation of licensees' capabilities to protect against the supplemented requirements to implement the DBT; and (c) identification of potential generic vulnerabilities. The staff began the TFOF program in February 2004. In closed sessions, the staff periodically briefed the Commission on TFOF program activities, lessons learned and approaches to resolution of issues.

#### Lessons Learned

#### TFOF

During the TFOF program, the staff has continued to compile, discuss, and resolve lessons learned on an exercise-by-exercise basis. The staff met approximately monthly with

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representatives from the Nuclear Security Working Group (NSWG) and the Nuclear Energy Institute (NEI) to maintain alignment on perspectives and to facilitate appropriate programmatic or procedural changes.

Seventy percent of the lessons learned during the TFOF program to date fall into three of the eight categories of issues being tracked, namely, Process (40 percent), Controllers (16 percent), and Adversaries (14 percent). The staff considers these results to be consistent with the revised objectives of the TI and the issues previously addressed by the Commission in SRM - SECY-04-0083. No new significant process or policy issues have been identified. However, process issues will continue to be resolved and procedures will continue to be refined as warranted during the remainder of the TFOF program. The most recent compilation of lessons learned is provided as Attachment 2.

The TFOF program has not identified the need for any significant adjustment to CMs beyond those already provided to the Commission. With respect to generic vulnerabilities, the staff was deliberate in its efforts during target-set analysis to pinpoint any deficiency with the potential to be overarching relative to a particular design or application.

### Emergency Preparedness

The Emergency Preparedness (EP) Section of the Office of Nuclear Reactor Regulation, which is now part of the Office of Nuclear Security and Incident Response (NSIR), participated in each scheduled TFOF exercise. The integration of the security, operations and emergency preparedness functions provided opportunities to assess operational interrelationships not previously considered. The staff noted several improvements to the EP demonstration segment of the FOF process.

The TFOF exercises generated EP lessons learned, which were separately tracked, including procedures and emergency response augmentation. The most significant EP lesson learned was addressed in procedures to ensure compatibility and consistency with Security and Operations during an event. In this regard, EP procedures directing actions which would normally be appropriate for the response to a radiological emergency may not be consistent with the response needs of a security event. Occurrences of inappropriate or incorrect plant public announcements were observed. Procedure actions were identified that, if carried out, could have jeopardized the physical safety of site personnel.

The significant emergency response augmentation lesson-learned identified the need for an offsite mustering location designated for personnel responding to the site to await safe entrance to the site. The effort should include response by site personnel as well as offsite fire and first aid that would allow for rapid entry when conditions permit. These lessons-learned from the performance observation were shared with the licensee and industry representatives at each TFOF out-briefing and will be summarized in a Regulatory Information Summary (RIS), which is now being developed by the staff.



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### Force-on-Force PPSDP

Beginning with TFOF #5, the staff used Part II, "Force-on-Force PPSDP for Power Reactors," to assess exercise results as part of a PPSDP pilot program. Of the eight site exercises assessed using the PPSDP during the TFOF site visits, five exercises revealed no findings, two exercises revealed a finding of moderate (white) security significance based on the complete loss of a single target set with no release path, and one exercise revealed a finding of substantial (yellow) security significance based on the complete loss of two target sets with no release path.

The staff retroactively applied the PPSDP to TFOF exercises one through four, which had not been previously assessed on site during the TFOF exercise. Within this group of exercises, three exercises would have revealed no findings and one exercise would have revealed a finding of high (red) security significance based on the complete loss of two target sets with at least one release path. Although actual "color" findings are not being issued during the pilot period, when warranted, licensees implemented immediate compensatory measures in accordance with NRC requirements. Further, in accordance with the provisions of the TI, performance issues were turned over to regional offices for final resolution. Site-specific PPSDP details are provided in Attachment 3.

With respect to EP findings, inspection procedures for the FOF portion are under development. The significance of those findings will be determined in accordance with the EP Cornerstone of the Reactor Oversight Process. EP findings directly related to a licensee's overall protective strategy will be considered Safeguards Information (SGI) and will not be disclosed to the public in accordance with 10 CFR Part 2.390(d).

### TFOF Initiatives

Controller/Evaluator Training - The staff continues to work with the NSWG on controller/evaluator guidelines titled, "Controller/Evaluator Responsibilities Guideline," for exercise controllers and evaluators. Once staff comments have been satisfactorily resolved, the staff plans to endorse these guidelines as an industry standard for controller and evaluator training. This effort by the staff is consistent with the Commission's direction in SRM - SECY-04-0083.

Industry Guidance for FOF Evaluation - The industry has developed and is piloting a guidance document, "Guidance for the Preparation and Conduct of Force-on-Force Exercises," to facilitate FOF exercises. The staff has observed the use of this guidance at a number of facilities with favorable results. The staff will consider endorsement of this guidance document as an industry standard and ensure that it fully comports with the NRC's FOF evaluation procedures and related guidance.

Composite Adversary Force - In April 2004, the staff issued NSIR/STD-2004/15-001, "Composite Adversary Force (CAF) Performance Standards for Force-on-Force Exercises,"

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which establishes the standards for CAF member selection, training, and qualification. Consistent with the Commission's direction in SRM-SECY-03-0208, dated December 23, 2003, the industry opted to provide a CAF for FOF evaluation. In July 2004, NEI awarded a contract to Wackenhut Nuclear Services to provide a CAF. An industry CAF is being developed and was used successfully for the first time in TFOF exercise 13 in September 2004.

The staff has received substantial expressions of concern regarding the Wackenhut selection from Congressional, non-governmental organization, and public stakeholders due to a perceived conflict of interest. The perception is based on the fact that Wackenhut will provide a CAF to test all power reactor licensed facilities while it also provides security for almost 50 percent of the industry. The staff is working with the industry on a number of initiatives to ensure the integrity of CAF performance during FOF exercises. In response to staff initiatives, NEI notified the staff in a letter dated September 10, 2004, that the CAF has been reorganized so that the Manager of the CAF now reports directly to the CEO of Wackenhut. Previously, he reported to the CEO of Wackenhut Nuclear Services, the business group which directly provides protective services to NRC-licensed facilities. Currently, the only CAF connection to Wackenhut Nuclear Services is for certain administrative and logistical support. Wackenhut has also expanded its CAF employment application solicitations to the entire nuclear industry. The initial application group was solicited from Wackenhut Nuclear Services' sites to speed the hiring process and make the CAF operational as soon as possible. When an exercise occurs at a CAF team member's home site, that CAF team member will not participate in any part of the exercise planning or execution at that site. In addition, the CAF will not perform an evaluation role in the exercises. CAF members will arrive on site at about the same time that the NRC evaluation team arrives and will be working closely with and overseen by the NRC inspection team and the NRC's subject matter expert contractors before and during the exercises.

Consistent with Commission guidance, the staff is also prepared to implement an NRC-provided CAF through modification of the existing MILES support interagency agreement with the Department of Energy (DOE) and the National Nuclear Security Administration (NNSA). This contingency, if required, would necessitate additional, unbudgeted program funding on the order of \$4.3 million per year. In addition, it would require several months for NNSA to hire, equip, train, and qualify a CAF of adequate size to meet the projected tempo of FOF evaluation program requirements. As stated above, the staff will be evaluating the performance of the CAF in the remaining TFOF exercises.

Joint Conflict and Tactical Simulation System (JCATS)

On July 23, 2004, the staff provided, by memorandum, a "Status Update on Acquisition of the Joint Conflict and Tactical Simulation System." As described in the memorandum, the staff has modified its initial plans for implementation of JCATS to focus during the remainder of the TFOF program on staff familiarization, procedural development, and limited site model development. [REDACTED] Because JCATS is not funded in FY2005 pending full funding of the planned FOF program activities, its integration into the FOF program will be limited and contingent upon unexpended funding carried forward from FY2004. The

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staff plans to integrate JCATS into a sample of FOF evaluation activities after commencement of the evaluation program.

### TFOF Program Completion

The staff will continue to monitor and track the actual exercise of significant FOF process aspects, specific DBT characteristics, and various target set elements to ensure that the TFOF program is inclusive of program variables. The current TFOF development activities matrix is provided as Attachment 4. Attachment 5 summarizes TFOF scenario times and results for exercise through August 2004. The staff has not identified any remaining policy issues requiring resolution.

### Plans for Implementation of the FOF Evaluation Program

The staff will implement the final FOF evaluation program in November 2004. Given the interface with the industry throughout the EFOF and TFOF, and the lessons learned that have been implemented, the staff has not identified any significant program issues to prevent successful transition into a full-scale FOF evaluation program.

Staffing, Training and Qualification - Most of personnel who will conduct FOF evaluation are new to the NRC and are not yet certified inspectors. The staff has developed and is implementing a training and certification plan for all personnel who will conduct FOF evaluation. The staff will train and board certify at least two four-member inspection teams before the initial FOF exercises in November 2004. By early 2005, the staff plans to have two more teams trained and certified. Given the travel schedule to complete the TFOF program, the many program initiatives, and significant recruitment activities, training and certification have been a major challenge for the staff to complete.

Artificialities - Artificialities are inherent to FOF evaluations. The staff has worked with the industry to minimize FOF exercise artificialities and to enhance realism, within safety bounds. However, artificialities associated with [REDACTED]

[REDACTED] To address this issue, the staff is developing guidelines [REDACTED]

Ex. 2

Scheduling and Notification - The staff has scheduled licensees for FOF evaluation through June 2006. The schedule includes both power reactors and Category 1 fuel facilities. The initial FOF exercise is scheduled for the week of November 29, 2004, at a power reactor. The staff coordinated the schedule with the regions and NRC contractors, to ensure their availability. The criteria for candidate sites were: [REDACTED]

Ex. 2

In its coordination, the staff ensured that there were no conflicts such as refueling outages, Institute of Nuclear Power Operations (INPO) evaluations or other team inspections.

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Consistent with Commission guidance, the first site was notified on September 7, 2004. The staff will monitor the 8 to 12-week notification window to determine if adjustment is necessary.

Since NEI contracts for the CAF, the staff plans to notify NEI at least 6 months in advance of a scheduled exercise to facilitate planning and logistical support for FOF evaluation. Appropriate NEI representatives will be required to sign trusted agent forms. For the [REDACTED]

[REDACTED] These teams have been trained to the CAF standard. Therefore, NR will also receive advance notification in a fashion similar to NEI.

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Inspection Procedure and Rules of Engagement - The baseline inspection program (BIP) for Physical Protection has a place holder for FOF evaluation. As part of the BIP, the inspection procedure for FOF evaluation is being developed and will be issued by November 1, 2004. The inspection procedure will incorporate appropriate lessons learned from the previous three-phased approach and draft TIs. The draft inspection procedure will be shared with the industry for its comments in early October 2004.

The staff intends to continue FOF evaluations in a two-visit scheme. Based on lessons learned from previous FOF evaluation activities and Commission guidance, a revised Rules of Engagement document will also be completed and issued by November 1, 2004.

Inclement Weather - Over half of the TFOF sites had one exercise canceled because of inclement weather. The staff will work with the industry on a strategy to ensure that the appropriate number of exercises are conducted to satisfy the requirements of the triennial exercise program. This may include the staff staying an extra day or scheduling a subsequent visit. At a minimum, three FOF exercises will be conducted per site, unless waived by the Director of the Division of Nuclear Security. Waivers will be contingent upon: (a) at least two exercises having been conducted, (b) both exercises having successfully demonstrated an effective protective strategy, and (c) no significant issues being identified.

EP Component and Integrated Response - The staff plans to continue the EP component of FOF evaluation. As the program progresses over time, the staff plans to incorporate a more robust integrated response with more emphasis on operational activities and off-site resources. The staff will continue to monitor site response capability and its coordination with security strategies to protect the facility under conditions defined in the supplemented requirements to implement the DBT and will use this information in integrated response activities. Attachment 5 summarizes TFOF scenario times and results for exercise through August 2004.

Meetings with Industry - The staff plans to meet periodically with NRC regional representatives and representatives from NEI and the NSWG to catalog, discuss, and implement lessons learned. These meetings will provide opportunities for continued improvement of the effectiveness and efficiency of the program, including alignment between the staff and the industry. The staff intends to continue its efforts to endorse acceptable industry guidance documents as warranted.

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PPSDP and Review Panel - The staff is continuing to exercise the newly developed FOF PPSPD during the PPSPD pilot period through December 31, 2004. As previously stated, the staff has assessed four findings through the proposed FOF PPSPD.

To date, the staff has solicited comments from industry stakeholders, NSWG and NEI on four separate occasions (05/13/04, 06/15/04, 07/01/04 and 08/17/04) to receive suggestions for enhancing both the Baseline and FOF PPSPDs. In addition, the staff plans to solicit additional comments from industry stakeholders via meetings to be held at the four NRC regional offices in the Fall of 2004.

In a memorandum dated July 28, 2004, the NEI SDP Task Force provided the staff with a proposed DRAFT PPSPD, developed by the Task Force and provided the following overall "first blush" comments regarding the NRC's proposed FOF PPSPD: (a) NEI views the triennial NRC-witnessed exercise as part of the continuum of annual exercises now being included in each plant's security training regimen; (b) it is NEI's understanding that the SDP is focused on a single finding, and if so it is not clear that a loss of more than one target set is a single finding; and (c) the industry contends that the NRC's proposed PPSPD does not use the principles developed in the EP SDP as does the industry's proposed PPSPD.

Evaluation and feedback from the NRC staff and industry will be considered and updated accordingly during November and December 2004. The results will be reported to the Commission along with lessons learned. Finally, the staff plans to implement the proposed FOF PPSPD on or about March 1, 2005, for use at all power reactor facilities.

### RESOURCES:

The discussed activities will be implemented within the total resources that are available in FY 2004. Resources for the expected continuation of the FOF program are included in the current budgets for fiscal years FY 2005 and FY 2006 as identified below. These resources are for FOF program activities including FOF program development and maintenance, MILES equipment, and FOF inspection exercises.

| Fiscal Year | Total Resources (\$K) including salaries and benefits | FTE, including regional resources |
|-------------|---|-----------------------------------|
| FY 2004     | 5,724   | 15                                |
| FY 2005     | 5,090   | 17                                |
| FY 2006     | 5,691   | 18                                |

### COORDINATION:

The Office of the General Counsel has reviewed this Commission paper and has no legal objections.

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The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objections.

CONCLUSION:

The TFOF program has successfully accomplished its planned objectives consistent with Commission direction. Absent unforeseen program-limiting problems being identified during the remaining three scheduled TFOF exercises, the staff plans to complete TFOF exercises in October 2004 and begin implementation of the FOF evaluation program in November 2004.



Luis A. Reyes  
Executive Director  
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- Attachments: 1. TI-2515/XXXX, "Transition Force-on-Force Exercise Evaluation Program"  
2. TFOF Lessons Learned  
3. TFOF PPSDP (SGI)  
4. TFOF Development Activities Matrix (SGI)  
5. TFOF Exercise Times and Results (SGI)

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# NRC INSPECTION MANUAL

NSIR

Temporary Instruction 2515/XXX

## TRANSITION FORCE-ON-FORCE EXERCISE EVALUATION PROGRAM

FUNCTIONAL AREA: Physical Protection Cornerstone

EVALUATION BASES: As a means to gain insight prior to full scale resumption of performance assessment of operating power-reactor licensees' protective strategies, the Nuclear Regulatory Commission (NRC) has determined it prudent to conduct a transition force-on-force testing program.

Through transition force-on-force exercises the analysis will be conducted at a sample of licensees to evaluate the impact of enhancements to a licensee's protective strategy resulting from the Order of February 25, 2002, requiring compensatory measures (CMs).

The analysis will also evaluate licensees' capabilities to protect against the revised design basis threat (DBT) shown in Attachment A.

### 2515/XXX-01 OBJECTIVES

01.01 To evaluate the process and scope of force-on-force exercises, potential adjustments to the CMs, and other significant physical security improvements prior to resuming full scale force-on-force exercises.

01.02 To evaluate licensees' capabilities to protect against the revised DBT.

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Issue Date:



01.03 To identify potential generic power reactor licensee vulnerabilities.

2515/XXX-02 APPLICABILITY

02.01 This temporary instruction (TI) applies to the transition force-on-force testing program. It is not intended to satisfy the baseline inspection requirements of the Physical Protection cornerstone.

2515/XXX-03 BACKGROUND

In 1991, the NRC began conducting performance assessments of power reactor licensee protective strategy capabilities through the Operational Safeguards Response Evaluation (OSRE) program. While power reactor licensees are required to protect against the full spectrum of the design basis threat characteristics, the OSRE program used a flexible methodology to test those elements consistent with the threat environment at that time.

As a prudent measure following the September 11, 2001, attacks, the NRC promptly postponed portions of the reactor oversight program pertaining to on-site protective strategy assessments. This included the table-top drill segment of Attachment 71130.03, Response to Contingency Events (Protective Strategy and Implementation of Protective Strategy), to Inspection Procedure (IP) 71130, Physical Protection, and the OSRE program, which entails force-on-force exercises. These oversight activities were postponed from September 2001 until August 2002, primarily because: 1) the conduct of drills and exercises would pose an undue safety risk from inappropriate responses to simulated or real events by armed security personnel; 2) drills and exercises would be a significant distraction from actual site security; and 3) NRC and licensee security resources were directly focused in responding to the events of September 11.

On February 25, 2002, the Commission ordered all power reactor licensees to begin implementing the CMs immediately and to complete implementation by August 31, 2002.

In an Order dated April 29, 2003, the Commission revised the design basis threat (DBT) for radiological sabotage to power reactors. Power reactor licensees are required to be able to defend against the revised DBT not later than October 29, 2004.

The primary purpose of this TI is program evaluation and development from information gained through transition force-on-force exercises (TFOF). The staff plans to conduct an analysis of licensees' protective-strategy capabilities against the revised DBT consistent with the Order. By conducting this analysis through a three-phase approach which began with expanded table-top drills and continued with expanded pilot force-on-force exercises, the staff believes that the lessons learned will inform the NRC's comprehensive review of reactor security; gauge the effectiveness of existing CMs; and inform NRC processes for future interaction with other agencies likely to be involved in the overall protection of power reactors.

2515/XXX-04 EVALUATION REQUIREMENTS

04.01 Evaluation Planning

- a. Identify selected sites at least eight weeks before implementation of this TI.
- b. Conduct Pre-activity Management Conference Call with licensee at least seven weeks before the on-site evaluation.
- c. Obtain target-set information at least six weeks before the on-site evaluation.
- d. Coordinate the composition of the NRC team at least four weeks before the preliminary site visit.
- e. Incorporate lessons learned in previous transition visits, OSREs, the expanded table-top evaluation and pilot expanded force-on-force exercises, that (especially) deal with target selection, tactics, and weapons that impact adversary success or failure in reaching their targets. Items to consider include; agenda of events, logistics, target set analysis, emergency preparedness (EP) specific demonstrations, adversary team/insider briefings and interactions, site tours, deadly force interviews, live-fire range demonstrations, and/or table top drills.
- f. Identify adversary team at least two weeks before the preliminary site visit.

04.02 Pre-Activity Management Conference Call

- a. Ensure that licensee management clearly understands the purpose, scope, and objectives of the evaluation. Confirm a schedule of evaluation activities. Schedule modifications will continue to be evaluated in the Transition Program. Establish a point of contact for meetings and any emergent issues. Explain that observations will not result in enforcement action or be subject to the Significance Determination Process (SDP) although a Pilot FOF SDP will be used for SDP evaluation purposes. However, any self-revealing non-compliance issue will be turned over to the Region for resolution. Confirm a tentative date and time for the pre-departure meeting.
- b. Ensure licensee management is aware of the need to conduct the EP response portion of the exercise in accordance with Attachment E of this TI.
- c. During the pre-activity meeting with key licensee management, stress that there will be no clandestine testing and that safety is paramount. All testing will be conducted with the full awareness of the security manager.
- d. The "on-site security forces" are those specified in the February 25, 2002 Order as the minimum number of armed responders always available to respond to a security contingency. These committed responders shall be clearly identified. All

exercises will incorporate no more than the number of security force members that are committed to in the NRC-approved security plan, stipulated by NRC Order, or those post 9/11/01 site security resources established in response to elevated threat conditions (as tracked by the NRC). Actual security force shift teams will be used to the maximum extent possible for these exercises.

- e. The Nuclear Security and Incident Response (NSIR) team and NRC advisory contractors will not play an active role in any exercise. The team will select the target set and entry point(s) for each exercise and elements of the DBT to be exercised. The team has the authority to override a controller call, impose a restart or an administrative hold or terminate an exercise for reasons they consider appropriate. Licensees should seek NRC team concurrence before they terminate an exercise, except in situations where actual plant conditions change or unexpected events occur which may impact station operation or personnel safety.
- f. The exercise will incorporate operator actions to determine scenario success. This may be accomplished by a post-exercise analysis with operational solutions factored in, involvement of operational staff as active participants during the exercises, and/or simultaneous or post-exercise use of the simulator.
- g. Verify licensee assurance that each controller has the requisite knowledge and experience to evaluate force-on-force exercises. NSIR will provide standard controller knowledge requirements developed by the industry and endorsed by NSIR so that licensees can provide standardized controller training.
- h. Verify that controllers will be co-located with all armed exercise participants, including those from non-licensee agencies/organizations (e.g., National Guard), who are within the exercise area.
- i. Verify that medical (e.g., EMT) personnel and equipment will be readily available during all exercises in case of actual personnel injury.
- j. Ensure licensee management is aware of current program lessons learned and appropriate actions have been taken.

#### 04.03 Preliminary Site Visit

##### a. Preliminary Target Analysis

NOTE: NSIR's Target Set Manual for Force on Force Testing should be used as guidance for the generation of target sets for TFOF exercises.

- 1. Conduct an in-office review of licensee target analysis of the plant design by using the information submitted by the licensee, the Updated Final Safety

Analysis Report (UFSAR), the conditions of the Order, and any publicly available pertinent information.

2. Determine the number of exercises to be run, their specific scope, and expected involvement by licensee and offsite support organizations. For exercises expected to involve major portions of the site staff (ex. Emergency Response Operations (ERO) ) and/or offsite organizations (ex. Local Law Enforcement (LLEA)), determine the most effective and safe involvement of those personnel.
3. Identify attractive preliminary target sets.
4. Assess whether preliminary target sets, if successfully sabotaged, would result in challenging 10 CFR Part 100 limits.

b. On-Site Target Analysis

1. Review preliminary target sets with a licensee representative.
2. Identify and resolve any discrepancies in the preliminary target sets wherever practical. The staff will make final decisions on any unresolved discrepancies.
3. Verify assumptions of target sets, that if achieved would result in a release exceeding Part 100 requirements, with licensee

c. On-Site Adversary Force Preparations

1. Select and provide target sets and entry point(s) to Adversary Force.
2. Select "Insider" for Adversary Force. Determine role of Insider. Ensure Insider understands his/her role in providing information in advance of exercise and possible role in the exercise. However, the insider will provide only that information/materials that he/she could obtain or be aware of through his specific job functions.
3. Provide open source planning information to the adversaries.
4. Adversary Force should begin attack scenario planning with assistance of Insider as soon as practicable. Lead and/or Adversary Force Controller(s) should be present for early awareness of scenario(s) and possible artificialities and impacts on exercise conduct.

NOTE: The identity of the insider, the selected target sets, or exercise scenarios must not be revealed to the licensee response force prior to an exercise. Towards this end, all

Issue Date:

licensee personnel who are privy to this information shall sign a "trusted agent" form (Attachment C) in which they acknowledge their responsibility for confidentiality.

#### 04.04 Emergency Preparedness (EP) Response

NOTE: NEI Generic Industry Guidance and Emergency Preparedness Force-on-Force Guidelines (Attachment E) should be used as the EP evaluation tools. Licensees should be prepared to "perform", "walk through", or "discuss" all of the EP Tasks in Attachment E.

- a. Discuss with licensee the NRC expectations for the EP portion of the TFOF exercises(s).
- b. Discuss elements of Attachment E and determine licensee's extent of participation for the EP portion.
- c. Determine the location where the EP portion will be demonstrated and any logistics necessary.
- d. Recommend enhancements to the licensee to improve scenario conduct or performance, based on past lessons learned, NEI scenario conduct guidance, etc.

#### 04.05 Management Overview of Protective Strategy, Implementation of CMs, and Changes in Response to the DBT Order

- a. Meet with the appropriate segment of licensee management and staff for a briefing on the protective strategy to include on-site support from other entities, any currently implemented and integrated CM within the protected area (PA) or owner controlled area (OCA), and any completed or planned actions taken to address advisories and to comply with changes to the DBT Order. Discuss the impact and licensee response to advanced notification of adversary intent or activity.
- b. Determine existing armed response force staffing level, contingency equipment, and deployment positions. Document the response force staffing levels to be used in the force-on-force exercises and those specified in the Physical Security Plan for the current threat environment. Identify both committed and non-committed personnel and resources. In general, the licensee may use only the committed or ordered number of armed responders. Licensee response may be augmented by additional armed security force members if that augmentation is demonstrated to be in accordance with plan, Order, or other commitments relative to normal duty assignments, level of readiness, and armament. Licensees will use existing organized shift teams in the conduct of force-on-force exercises to the extent practicable.
- c. Determine plant operations' input in defining and validating the protective strategy.

- d. Determine any perceived adverse impact on plant operations created by security measures and procedures.
- e. Review command and control of the protective strategy and response commitments from local law enforcement personnel or other off-site resource/support organizations.

04.06 Owner Controlled Area, Protected Area and Vital Area Tours

a. Owner Controlled Area (OCA)

- 1. Tour appropriate sections of the OCA to verify briefing information and to evaluate approaches to the PA which appear advantageous to the adversary. Identify any target set elements in the OCA.
- 2. Identify potential-adversary staging or surveillance areas and routes of travel within the OCA which may challenge the overall protective strategy. Especially note any areas in which the response force's ability to detect adversary presence or movement is challenged.
- 3. Identify conditions within the OCA which may facilitate a diversion.
- 4. Determine capability for alerting plant personnel and members of the public within the OCA to take protective actions against intruders.
- 5. Identify potential exercise artificialities within the OCA.

b. Protected Area (PA)

- 1. Tour the PA to verify briefing information and to evaluate delay barriers, defensive positions, and advantageous routes of travel to target sets by a potential adversary.
- 2. Identify any entry location into the PA likely to challenge the protective strategy; physical location and accessibility to target equipment; and protective measures.
- 3. Consider any compensatory measures, licensee actions in response to changes in the DBT Order, or licensee initiatives likely to have an impact on the exercises.
- 4. Identify potential exercise artificialities within the PA.

- c. Vital Areas (VA). Conduct a tour of VAs to verify briefing information and to evaluate the physical location and accessibility to target equipment, defensive positions, other protective measures and potential exercise artificialities.

04.07 Table Top Drills

- a. Conduct a suitable number of table top drills with appropriate security, operations, and emergency planning (EP) personnel to assess the number of committed responders, deployment strategy, defensive positions, relative response times, plant operator actions, and onsite and offsite law enforcement and emergency preparedness resource response capability.
- b. Licensees should exclude all force-on-force exercise response team personnel from table top drills and from adversary briefings. Licensee personnel directly involved in the conduct of table top drills should not participate in subsequent force-on-force exercises. The above exclusions do not include controllers.
- c. Make initial evaluation of the licensee's protective strategy and CM implementation with respect to a variety of targets and challenges posed by the revised design basis threat.
- d. Evaluate the licensee's utilization of table top drills/materials both as a training tool and as a means of self-auditing the protective strategy.

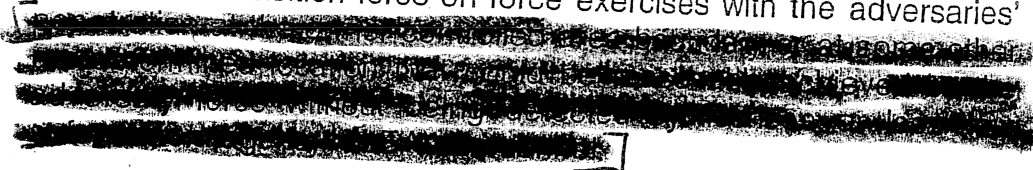
04.08 Exercise Preparation and Logistics

- a. NRC may provide Multiple Integrated Laser Engagement System (MILES) equipment, which will be set up by NRC MILES contractors. NRC MILES contractors will provide training/familiarization to the licensee during the week prior to the exercises. When this equipment is used, NRC will also provide procedural guidance for safe operation and use of said equipment. All participants will be instructed to comply with this guidance. The use of MILES equipment shall be predicated on the continued safe use of MILES equipment.
- b. Licensees may utilize licensee provided MILES equipment so long as that equipment functions appropriately, meets NRC safety standards, and the licensee has written guidance for the use and training of MILES equipment that is equivalent to that of the NRC provided guidance.
- c. Licensees should have [REDACTED] NRC will provide separate radios for the NRC team. Both the exercise controllers and the NRC evaluators shall have ear pieces to avoid other personnel (e.g., exercise participants) overhearing their communications. Similarly, the mock adversary force shall have ear pieces to enable surreptitious movement.

Ex. 2

04.9 Transition Force-On-Force Exercises and Licensee Exercise Critiques

a. Transition Force-on-Force Exercises

1. Provide the licensee's mock adversary team with target-set objectives, a profile of the revised DBT, a description of the equipment at their disposal and the entry route(s) to the OCA and/or PA as required and described in the NRC approved rules of engagement (ROE) document.
  - (a) Commence transition force-on-force exercises with the adversaries'  Ex. 2
  - (b) Explore various adversary delivery/transportation methods.
2. Use MILES equipment provided by either the NRC or the licensee.
3. Observe the licensee conduct the force-on-force exercise demonstrating its protective strategy.
4. Run each scenario to the extent that the responding off-site resources and the integration of security, operator actions, and EP actions are discussed and understood.
5. Conduct exercises, whenever practicable, considering conditions and OCA hazards, in hours of darkness. A minimum of one scenario, beginning at or near the protected area boundary, shall be run during the hours of darkness, if OCA conditions limit the ability to conduct exercises in the OCA at this time.
6. Verify the realism of actions by exercise participants (adversaries, responders, alarm station operators, operations personnel, controllers, etc.).
7. Compile a written list of collateral or targeted damage which would likely occur during engagements and the resulting potential adverse impact on the security strategy along with the timelines associated with the damage being incurred. Whenever possible, this should include impact to plant operation's mitigation and recovery efforts.
8. Fully discuss a transition phase in at least one exercise that addresses establishing on-scene command and control functions, dispatch of medical support to treat injuries, and transition to the next shift.



9. Observe implementation of EP CMs. Note any observed problems and good practices with the EP/Operations/Security interface.

- b. Licensee Exercise Critiques

1. Observe the licensee's critiques of the force-on-force exercises to determine if weaknesses are identified and appropriately addressed.

04.10 Tactical Training (These items will only be performed as warranted and as determined by NRC)

- a. Review the tactical training program to assess consistency with the protective strategy as demonstrated during force-on-force exercises.
- b. Review instructor certification and experience to determine appropriateness.
- c. Verify availability of contingency weapons and equipment.

04.11 Firearms Training

- a. Observe live fire at a firing range to assess the adequacy of the range and courses of fire in simulating conditions likely to occur during an actual contingency at the site and to determine the ability of individual guard force members to effectively engage and consistently hit the target(s) at these unique courses. The course of fire demonstrated will include the use of smoke or a simulated chemical agent in order to determine the security members' actions, time required to don protective mask, and ability to engage targets while wearing the protective mask.
- b. Evaluate effectiveness of range safety and assess security personnel's proficiency relative to weapons manipulation.
- c. Assess the courses of fire relative to reinforcement of appropriate use of deadly force.

04.12 Evaluation Team Meetings

- a. Summarize and evaluate lessons learned.
- b. Develop plans for succeeding transition force-on-force exercises.
- c. Evaluate and incorporate licensee comments, as appropriate.
- d. Document lessons learned and their rationale.
- e. Identify issues to be discussed with licensee management.

04.13 Licensee Management and Evaluation Team Meetings

- a. Meet periodically with licensee management to discuss lessons learned.
- b. Meet as necessary with appropriate licensee management to resolve emergent issues or conditions requiring clarification.
- c. Facilitate any necessary changes to scheduled activities.

04.14 Summary Meetings. Conduct a briefing with licensee management prior to leaving the site at the conclusion of the preliminary visit and at the conclusion of the FOF exercises to share and validate available data and answer questions.

2515/XXX-05 EVALUATION GUIDANCE

General Guidance

NSIR will lead this analysis using the force-on-force approach discussed in this TI with the participation of NRC contractors, Regional security staff, and NRR EP staff. This TI is not intended to verify licensee compliance with the February 25, 2002, Order.

Transition force-on-force exercises are performance based for identifying potential protective strategy performance strengths and weaknesses and, to a lesser degree, the integration of plant operations response to a security based event. These exercises will be used for program development purposes and the results are not subject to enforcement actions. However, self-revealing compliance or performance issues will be turned over to the respective Region for resolution. Team members may provide input as appropriate.

During the transition force-on-force exercises, the NSIR team will pilot a Physical Protection SDP (PPSDP). For scenarios resulting in core damage or spent fuel sabotage, off-site consequences should be estimated by NRC in order to determine the risk significance (with reference to a Part 100 release) of the security deficiency. Simulated destruction of the complete target set is significant in itself with respect to the performance of site security. However, destroying a target set that results in a release is of greater significance relative to its potential effect on public health and safety. In general,

Ex. 5

[REDACTED]

The loss of multiple target sets during different FOF exercises can also result in an escalation of pilot findings.

Licensee participation in this activity is expected to be voluntary. Therefore, individual licensee fees may not be assessed in the conduct of this TI. However, annual fees will apply.

### Specific Guidance

#### 05.01 Evaluation Planning

- a. The staff will conduct exercises at a rate of approximately two per month, subject to contractor availability, until the revised design basis threat (DBT) is effective. Sites selected should reflect a mixture of licensees to increase the probability of obtaining industry-wide representative results. Factors to consider should include:
  1. Both boiling water reactors (BWRs) and pressurized water reactors (PWRs),
  2. A mixture of protective strategies (i.e., internal, or external denial),
  3. The size of the owner controlled area (OCA),
  4. Target-set equipment outside the protected area (PA),
  5. A varying number of dedicated armed responders.
- b. The industry will solicit volunteers and nominate plants and proposed visit dates to NRC Headquarters (HQ) as soon as possible after issuance of this guidance. The NRC Regional Offices, in coordination with NSIR, will select plants and schedule site visits using this list of volunteers where possible and subject to contractor availability. Licensees will be requested to ensure that the most current target set information is provided at least 6 weeks prior to the scheduled on-site start date of the force-on-force exercise.
- c. Telephone conferences and meetings will be held to adequately prepare for the actual exercise site visit. These preparations could include; agenda of events, logistics, target set analysis, adversary team/insider briefings and interactions, site tours, deadly force interviews, live-fire range demonstrations, and/or table top drills. Additionally, information may be requested regarding operational response to security events, planned level of EP and/or Operations participation or other pertinent Ops/Security interface data needed.

#### 05.02 Preliminary and On-Site Target Analysis

- a. NSIR will review the licensee's target sets to determine if appropriate equipment and operator actions have been effectively developed and grouped and verify that

adequate location information for each target set is provided. Adequate location information is defined as the necessary information that will allow a generally knowledgeable and experienced person, not familiar with the specific site, to reasonably locate the referenced component. The necessary information must include, at a minimum, the building, floor elevation, and a combination of descriptive location information to locate a specific component. The licensee and NRC will review existing target sets and formally concur, using an NRC provided form (attached), on those sets which are to be used in the upcoming FOF exercises at least 2 weeks prior to the evaluation.

b. On-Site Target Set Review.

1. Review the assumptions used in the target set determination with the licensee. NSIR's Target Set Manual for Transition Force on Force Testing should be used as guidance during this review.
2. Perform specific verification on the capability of each scenario target set to result in significant core damage or spent fuel sabotage with the licensee. This verification should include a review of the determination logic used by NRC during target set development, as performed in Attachment F of this TI or other suitable means.

05.03 Pre-Activity Management Meeting

- a. Verify that the licensee has ensured that each controller has the requisite knowledge and experience in accordance with industry developed criterion, to definitively evaluate:
  1. Principles of cover and concealment to include natural and fabricated defensive positions.
  2. Range and ballistic capabilities of exercise weapons.
  3. Target identification, acquisition, and engagement.
  4. Hand-held explosive devices and their effective displacement upon detonation.
  5. Body armor used in the exercise and the limit of protection.
  6. Dispersal of chemical agents and smoke grenades.
  7. Protective masks used in the exercise and the limit of protection.
  8. Overall procedures for conducting force-on-force exercises including the use of MILES equipment. NRC procedures for the use of NRC-provided MILES equipment will be promulgated at a later date.

9. Site specific delay barriers and movement timelines.

10. Exercise and site safety procedures.

05.04 Management Overview of Protective Strategy, Implementation of CMs, and Changes in Response to the DBT Order

- a. Meet with the security manager or his/her designee for an overview of the protective strategy.
- b. Review security plan commitments and heightened security measures as a result of the February 25, 2002 Order, the DBT Order, and current threat environment. Determine if there is on-site support from other organizations. If so, have the licensee provide detailed information on utilization of those assets and command and control protocols. Include those assets in the evaluation, as appropriate.

05.05 Owner Controlled Area, Protected Area and Vital Area Tours. No additional guidance is provided.

05.06 Table-Top Drills. No additional guidance is provided.

05.07 Exercise Preparation and Logistics. No additional guidance is provided.

05.08 Transition Force-On-Force Exercises and Licensee Exercise Critiques

a. Transition Force-On-Force Exercises

1. The force-on-force exercises will be brought to a clear resolution, i.e., to a point where it is clear that either the adversaries have reached and functionally destroyed their target set, or where the response force has brought a sufficient number of responders to appropriate defensive positions, with appropriate weapons, in time to interdict and stop/isolate the adversaries in a non-sensitive area. If the adversaries have reasonably reached their target set, with due consideration for artificialities/simulations/etc, operations mitigation/plant recovery/take back/EP actions should then be considered to evaluate the potential impact on the plant. The NRC team has the authority to override a controller's call, impose a restart or administrative hold, and/or to terminate an exercise at any time for reasons they consider appropriate.
2. Credit for equipment and actions within a target set will be given only if the following criteria are met: (1) sufficient time is available to implement these actions; (2) environmental conditions allow access where needed, (3) adversary interference is precluded; (4) any equipment needed to complete these actions is available and ready for use; (5) approved procedures exist; and (6) training is conducted on the existing procedures under conditions similar to the scenario assumed.

If a licensee desires to take credit for mitigative equipment and operator actions during NRC's assessment of site security resulting from the force-on-force exercise, that equipment must be identified as part of the target set before initiation of the exercise. However, it is noted that any operator actions that a licensee may take beyond those identified in a target set will be used to evaluate the recovery from the consequences of the lost target set and to evaluate the overall impact to public health and safety.

3. Determine, through discussion, performance, or simulation consistent with Attachment E, how EP activities would be initiated and integrated with response activities. Similarly, off-site resources (e.g., local law enforcement; local, state, and federal agencies) should be discussed and assessed for timeliness and integration with the licensee response strategy/forces. Participation by representatives of off-site resources should be limited to a few individuals who can engage in comprehensive discussions on action-plans with respect to providing assistance to the respective licensee during a safeguards contingency. These discussions should attempt to determine if a clear understanding of roles and responsibilities exist at various times of the event for each organization.
4. The transition force-on-force exercises should be conducted on-site expeditiously and with only that documentation necessary to be able to detail the exercise time line and recreate the exercise as it relates to the objectives of this TI. Standardized force-on-force forms should be used to facilitate consistency in documentation. This written summary of general actions, paths, engagements, targets reached, and lessons learned should be done after each exercise. The summary for each exercise shall also include sections relative to the TI objectives, namely: 1) the effectiveness of the CMs against the specific adversary characteristics utilized, as demonstrated through licensee programs; and 2) the effectiveness of the licensee's demonstrated protective strategy against the revised DBT.

b. Licensee Exercise Critiques

1. Evaluate the licensee's utilization of exercises both as a training tool and as a means of self-auditing the protective strategy.
2. Determine if the licensee uses this or any other type of exercise/drill to train response force personnel.
3. Evaluate the licensee's analysis of occasions when Security Force Member's (SFM) simulated fire was directed at unknown or friendly personnel or in a direction which would potentially cause injury or equipment damage.

05.09 Tactical Training

- a. Visit and evaluate any tactical training facility that the licensee may have.

Issue Date:

- 15 -

2515/XXX

- b. Observe tactical training demonstrations to determine if training appears sufficient in scope and frequency to assure a reliable capability.

05.10 Firearms Training

- a. The team should evaluate the appropriateness of the firearms training, the experience of the training staff, the facilities available, and the techniques and frequency of training employed to assure that contingency response personnel are capable of executing their assigned responsibilities.
- b. The licensee will demonstrate its tactical and/or stress courses of fire.
  - 1. Observe a sufficient number of security officers demonstrate the courses of fire to assess their ability to manipulate the weapons safely and competently. The team will select security officers to demonstrate the courses of fire from the entire on-site security force population.
  - 2. Assess the proficiency of security officers executing the courses of fire.
  - 3. Assess the relevancy of the courses of fire to on-site conditions.
  - 4. Determine whether the licensee trains security officers in friend/foe target identification firing.
  - 5. Assess the security officers' reaction to smoke/simulated chemical agents, document times required to don protective masks, and ability to engage targets while wearing the protective mask.

05.11 Evaluation Team Meetings. No additional guidance is provided.

05.12 Licensee Management and Evaluation Team Meetings. No additional guidance is provided.

05.13 Summary Meeting

- a. Meet with licensee management to present lessons learned. As applicable, identify any potential self-revealing non-compliance issues to be turned over to the respective region for resolution.
- b. Provide the licensee the option of being forwarded a summary of the lessons learned at its facility. Should the licensee request a summary, inform the licensee that it will be transmitted by NSIR through normal channels within 30 days.

2515/XXX-06 REPORTING REQUIREMENTS

6.01 NSIR staff will document observations and lessons learned after each site evaluation. Documentation will include lessons learned from the transition force-on-force testing program outlined in the TI.

06.02 Following completion of the transition force-on-force exercises, an overall lessons learned report will be compiled.

06.03 NRR staff should provide input to the NSIR staff from the observations of the Operations/Security/Emergency Preparedness interaction as appropriate.

2515/XXX-07 COMPLETION SCHEDULE

All of the evaluations conducted under this TI should be completed by October 28, 2004.

2515/XXX-08 EXPIRATION

This TI will expire December 31, 2004.

2515/XXX-09 CONTACT

For questions regarding the performance of this TI, contact Ronald Albert.

2515/XXX-10 STATISTICAL DATA REPORTING

All direct evaluation effort expended on this TI is to be charged to TAC No. \_\_\_\_\_.

2515/XXX-11 ORIGINATING ORGANIZATION INFORMATION

11.01 Organizational Responsibility. This TI was initiated by the Safeguards Performance Evaluation Section (SPES), Division of Nuclear Security (DNS), NSIR.

11.02 Resource Estimate. The estimated on-site evaluation effort to perform this TI is estimated to be 6.0 HQ staff days, 5.0 region staff days, and 7.0 HQ advisory contractor days per site. An additional 10.5 HQ staff days will be needed after each site evaluation to ensure consistency throughout the evaluations.

| <u>Evaluation Requirements</u> | <u>Staff Hours</u> |
|--------------------------------|--------------------|
| In-office Review               | 40 hours           |
| Direct Evaluation              | 288 hours          |
| Management Meetings            | 6 hours            |

Issue Date:



11.03 Other. Typically, the NRC will not conduct safeguards inspection activities concurrent with the transition exercises. Should a region elect to conduct safeguards baseline inspection activities concurrent with the TFOF exercise activities, that region will coordinate those activities with NSIR and will be responsible for development of an inspection plan to reflect the additional activities.

11.04 Training. NRC MILES contractors will provide training to licensee's that use NRC supplied MILES equipment.

11.05 Reference

ORDER MODIFYING LICENSES 7590-01-P (Revision of Design Basis Threat for Radiological Sabotage of Power Reactors) dated April 29, 2003.

END

Attachments

- A. CONDUCT, AGENDA, AND RULES OF ENGAGEMENT TRANSITION FORCE-ON-FORCE EXERCISES
- B. TARGET SET CONCURRENCE FORM
- C. TRUSTED AGENT FORM
- D. MILES EQUIPMENT SAFETY RULES
- E. EMERGENCY PREPAREDNESS FORCE-ON-FORCE GUIDELINES
- F. PHYSICAL PROTECTION SIGNIFICANCE DETERMINATION PROCESS FOR POWER REACTORS

# TRANSITIONAL FORCE-ON-FORCE LESSONS LEARNED

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July 20, 2004

|   |                             |                        |  |  |
|---|-----------------------------|------------------------|--|--|
| 2. If officer has a use of deadly force card he should use it during interview. | Explain prior to interview. | NEI guidance document. |  | CLOSED<br>Prior to deadly force interview instruct participant on his ability to use training aide if carried with him at all times while on duty. |
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| 7. Need thicker concentration of smoke (during range training) to more accurately reflect realistic conditions during engagements involving smoke. |  |  | Not observing true smoke effect. It appears tFOF 10 use liquid smoke with satisfactory results. | NEI ACTION. Will have industry evaluate liquid smoke. |
| 8. Excessive coaching by range instructors can severely hamper the evaluation of the weapons demonstration/shooters skill.                         |  | NEI will advise licensee in corrective action. |   | NRC monitoring.                                       |

Section VII: TABLE TOP DRILLS

| ISSUE  | NRC ACTION   | INDUSTRY COMMENT  | NRC COMMENT  | RESOLUTION/STATUS |
|--|--|---|--|-------------------|
| 1. Visual aids were not conducive to individuals not thoroughly familiar with their process/plant.   | Establish a model/process for table top exercises. | This issue is covered in the tFOF guidance document NEI 03-11.                            | Need to effectively verbalize or document where responders move. | NRC/NEI ACTION.   |
| 2. 3D table top was adequate for TFOF activity on exterior of plant; however, the interior diagrams should use magnets labeled with appropriate call sign. | Establish a model/process for table top exercises. | This was a site specific issue which has been addressed and communicated to the industry. | Need to effectively verbalize or document where responders move. | NRC/NEI ACTION.   |

# TRANSITIONAL FORCE-ON-FORCE LESSONS LEARNED

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|---|--|---|---|---|
| 5, Responder fail to remain at initial response position which jeopardized the protective strategy. |  | This was a site specific issue which has been addressed and communicated to the industry. | Responders need to remain in their protective position unless instructed to move or the position calls for movement. tFOF #9, responder independently left DFP to become more involved in the action. | NEI ACTION. Will communicate issue to industry. |
|---|--|---|---|---|

## Section VI: WEAPONS DEMONSTRATION

| ISSUE   | NRC ACTION   | INDUSTRY COMMENT  | NRC COMMENT | RESOLUTION/STATUS |
|---|--|---|-------------|-------------------|
| 1. Members ran through course three times prior to demonstration.   | NRC will not provide names prior to previsit.  |   |             | CLOSED.           |
| 2. It is important that weapons demonstration closely replicate likely conditions in a security contingency e.g. donning gas mask, smoke. | Ensure NRC team lead includes in initial letter what items need to be demonstrated at the range. | In regard to smoke, would require an engineering analysis and appropriate weather conditions. |             | NEI/NRC action.   |

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|--|--|--|--|--------------|
| 5. Adversaries lacked<br>a. Exercise specific training time.<br>b. Area to train on exercise specific activities/tactics without being observed by Licensee personnel. |  | Industry CAF effective August.                 | NRC TI provides 12 calendar days to plan and train.                              | NEI ACTION.  |
| 6. Adversary exercise briefings may be enhanced by having a computer/projector available during the planning phase.  | NRC should evaluate.   | Hardware issue.<br>NEI CAF effective August.   |  | NEI ACTION.  |
| 7. Adversaries were challenged by having their scenarios changed late in the process (within 2-3 hours of exercise).   | NRC TI provides 12 calendar days to plan.  | This is covered in the FOF guidance NEI 03-11. | Licensee should have adequate time during the planning phase to prevent this.    | NRC MONITOR. |
| 8. Insider was not available to adversary during planning stages   | NRC will ensure Licensee understands that insider need to remain available to the adversary. | This is covered in the FOF guidance NEI 03-11. | Ensure insider is available from end of previsit until the end of all exercises. | NRC MONITOR. |
| 9. Adversary prepared spreadsheet outlining events for controllers.  |  | This is covered in the FOF guidance NEI 03-11. | Recommend all sites follow this example.<br>Best practice.                       | NEI ACTION.  |
| 10. Inconsistent planning schedule.  | Develop a set adversary planning schedule.   | This is covered in the FOF guidance NEI 03-11. | Need consistent planning schedule site to site.                                  | MONITORING.  |
| 11. Adversaries exhibited poor tactical movement in the OCA.   |  | Industry CAF in August.                        | tFOF #9  | NEI ACTION.  |

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|  |  |  |   |                 |
|--|--|--|---|-----------------|
| 10. Lead controller outlined and briefed event line with specific locations and instructions for specific controllers. |  | Part of NEI controller guidance found in the appendix of FOF guidance NEI 03-11. | Best practice.  | BEST PRACTICE.  |
| 11. Controller calls are not second nature.  | Remind controllers to mentally rehearse anticipated actions.                             | Part of NEI controller guidance found in the appendix of FOF guidance NEI 03-11. | Site should provide exercise controllers a description of events and their required actions if that event is reached. | NRC/NEI ACTION. |
| 12. Controllers must ensure that players receive and understand complete event information.                            | Remind controllers during briefing. Recent exercises has been more controller execution. | Part of NEI controller guidance found in the appendix of FOF guidance NEI 03-11. | Will have reserve controller briefs to ensure controller knows their responsibility.                                  | MONITOR.        |

**Section IV: ADVERSARY**

| ISSUE                                   | NRC ACTION | INDUSTRY COMMENT                 | NRC COMMENT | RESOLUTION/STATUS                            |
|---|------------|----------------------------------|-------------|--|
| 1. Adversaries were not "well trained". |            | Industry CAF effective August 1. |             | NRC/NEI ACTION. Answer/Standard implemented. |

# TRANSITIONAL FORCE-ON-FORCE LESSONS LEARNED

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|               |            |  |   |  |
|---------------|------------|--|---|--|
| 2. [REDACTED] | [REDACTED] | [REDACTED]                               | Specified in NRC DBT guidance document.                         | NRC ACTION.<br>Team leads should meet and resolve issue. |
| 3. [REDACTED] | [REDACTED] | Site specific issue that has been fixed. | tFOF #7, site specific. Toggle switch in CAS eliminated problem | CLOSED.  |

Ex.2

## Section III: CONTROLLER


| ISSUE   | NRC ACTION  | INDUSTRY COMMENT   | NRC COMMENT                            | RESOLUTION/STATUS                                   |
|---|---|--|--|---|
| 1. Controllers were not sure of barrier delay times.  | NRC, with Licensee, will establish barrier delay times prior to exercise in accordance with barrier book. | Part of NEI controller spreadsheet found in the FOF guidance NEI103-11.          | Delay times based on NRC barrier book. | NRC ACTION.<br>Resolve times during scenario brief. |
| 2. Controller horns (for explosions) were malfunctioning.   | NRC to obtain demonstration prior to exercises.   |  |  | CLOSED.   |
| 3. Controllers<br>a. Looked to NRC to make calls.<br>b. [REDACTED]<br>c. [REDACTED]<br>d. Not stopping activity in timely manner. | NRC evaluating controller training issues.  | Part of NEI controller guidance found in the appendix of FOF guidance NEI 03-11. |  | NRC/NEI ACTION.                                     |

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|   |  |   |  |                |
|---|--|---|--|----------------|
| 25.  | NRC communicated this recommendation to the licensee.                              | This was a site specific issue that will be communicated to the industry.   | tFOF #7  | NEI ACTION.    |
| 26. MILES (DOE) support were not used for the week prior to TFOF exercise.              | Need to evaluate purpose of DOE contractor.  | Site specific issue. tFOF site 9 has their own MILES gear and didn't feel a need for as much familiarization with the gear. In the current schedule the time the gear arrives on site does not provide much time for the shadow force to train. | tFOF #9  | NRC ACTION.    |
| 27. Scripting of scenarios should allow for real time changes.                          | Brief alternative prior to exercise action, but have to allow tactical discretion. | The insider did not provide the level of information for adequately planned scenarios. This is a repeat issue from EFOF lessons learned. The scenarios should be scripted with alternates if a plan fails.                                      | tFOF #9, caused by adversary team lack of familiarization with plant layout. | NEI ACTION.    |
| 28. MILES configuration restricted ability of responder to use BRE ports.               |  | Could not use site through port on tower.   |  | Monitor issue. |

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|   |  |  |   |            |  |
|---|--|--|---|------------|--|
| 16. Critique of Exercise needs to be more organized to benefit a person less familiar with the plant site.  | [REDACTED]   | [REDACTED]   | [REDACTED]  | [REDACTED] | CLOSED.<br>Issue has not recurred since tFOF #1.                 |
| 17. A. Critique of Exercise needs to be more organized to benefit a person less familiar with the plant site.<br><br>B. Critiques need to come to a conclusion. | NRC Team lead recommends the Licensee have the responders that encountered action use a laser pointer in conjunction with call signs and map of power plant to show their original location and the route the responder took to respond to the threat. | This issue is covered in the Industry controller guidance document found in the appendix of NEI 03-11.<br><br>This issue is covered in the Industry controller guidance document found in the appendix of NEI 03-11. | NRC team lead will instruct lead controller that critiques must result in a conclusion about the exercises. | [REDACTED] | NRC ACTION.  |
| 18. Change of target set in mid stream involving a safety issue related to a ladder.  | NRC Team Leader recommends the Licensee have the Insider aggressively involved in the scenario briefing.   | Can alleviate issue with scenario walk down by team member. This issue is covered in the Industry controller guidance document found in the appendix of NEI 03-11.   |   |            | CLOSED.<br>If scenario process is followed this will not happen. |
| 19. [REDACTED]  | [REDACTED]   | [REDACTED]   | [REDACTED]  | [REDACTED] | NRC/NEI ACTION.  |

Ex. 2

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| 5. Adversaries need to brief NRC on plan updates prior to Licensee briefing.   | NRC to promulgate instructions.  | The Industry has requested more time between pre-visit and exercise week.                              |  | Answer/Standard issued.                 |
| 6. Adversaries should be excused from evening debriefs prior to responders break down of scenario and their actions which reveal Licensees defensive strategies. | NRC to ensure adversaries released from meeting.   | This issue is covered in the Industry controller guidance document found in the appendix of NEI 03-11. |  | CLOSED.<br>tFOF #4 Done<br>tFOF #5 Done |
| 7. Adversaries need to be able to plan, practice and understand scenario as a team versus one or two members.  | NRC to promulgate instructions.  | NEI should have CAF team stood up by August 1 <sup>st</sup> .  |  | Answer/Standard issued.                 |
| 8. Ensure proper live round inventory completed prior to drill.  | Ensure information provided at controller brief to ensure proper inventories.                            | This will be added to the FOF guidance document.   |  | NEI ACTION.                             |
| 9. NRC team involvement with adversary planning needs to be increased (not NRC Contractor issue).  | Security specialist will remain with adversary team on Thursday and Friday of pre-visit.                 |  | NRC Team Leader to assign personnel based on schedule and availability.                      | CLOSED.<br>NRC to implement.            |
| 10. NRC/Licensee need to ensure adequate MILES equipment available during exercises.   | NRC to evaluate contract requirements for MILES reset equipment. (Need to determine appropriate number). |  | Possible controller issue. DOE has 12 controller guns available at site. DOE contract issue. | NRC ACTION.                             |